filed on October 9, 1998, now U.S. Patent No. 6,308,203, all of which are incorporated herein by reference to the extent permitted by law.

On page 2, the paragraph starting at line 10 is amended as follows:

To overcome this inconvenience, OPS (Open Profiling ~~Standard) for example provides,~~ Standard), for example, provides on the user's personal computer, as application programs, a user profile recorded with the user's personal information and a user agent for providing this user profile to service or information providers on behalf of the user as required. This system therefore frees the user from inputting the same personal information every time he or she accesses the service or information providers.

On page 2, the paragraph starting at line 19 is amended as follows:

However, in this ~~related art system,~~ approach, each user must prepare the user agent as the application program on his or her own. Consequently, if a revision is made in a communication protocol or format used, the user must update the application program accordingly, thereby presenting a problem of increased user load.

On page 8, the paragraph starting at line 15 is amended as follows:

~~FIG. 10 is a flowchart~~ FIGS. 10A and 10B are flowcharts indicative of the operation of the user agent device 111 shown in FIG. 1;

On page 9, the paragraph starting at line 7 is amended as follows:

Now, an information processing apparatus ~~as claimed in claim 1 comprises a~~ in accordance with one embodiment of the present invention includes storage means (for example, a user profile database 110 shown in FIG. 1) for storing personal information of two or more users and a providing means (for example, a proxy device 109 shown in FIG. 1) for providing the personal information stored in the storage means to the information processing device of an information provider (for example, a service provider device 114 shown in FIG. 1) on behalf of the information processing device of a user (for example, a terminal device 101 shown in FIG. 1) when the providing means is accessed by the information processing device of the user and is requested by the information processing device of the information provider for providing the personal information.

On page 9, the paragraph starting at line 21 is amended as follows:

The information processing apparatus ~~as claimed in claim 2~~ of another embodiment of the present invention further comprises a decision means (for example, step S71 shown in FIG. 8) for determining whether in is necessary to get the permission by the user for the provision of the personal information stored in the storage mans and an inquiry means (for example, step S72 shown in FIG. 8) for inquiring, according to the decision made by the decision means, the information processing device of the user whether the personal information can be provided or not and receiving a reply therefor. According to the reply received by the inquiring means, the providing means provides the personal information stored in the storage means to the information processing device of the information provider.

On page 10, the paragraph starting at line 11 is amended as follows:

The information processing apparatus ~~as claimed in claim 4~~ of yet another embodiment of the present invention further comprises an authentication means (for example, step S1 shown in FIG. 2) for authenticating the user.

On page 10, the paragraph starting at line 15 is amended as follows:

The information processing apparatus [~~as claimed in claim 5~~] of still another embodiment of the present invention further comprises a detection means (for example, step S131 shown in FIG. 11) for detecting whether two or more access operations have been simultaneously made from a user whose personal information is stored in the storage means.

On page 10, the paragraph starting at line 21 is amended as follows:

The information processing apparatus ~~as claimed in claim 9~~ of still yet another embodiment of the present invention further comprises another detection means (for example, step S132 shown in FIG. 11) for detecting unauthorized access to the personal information.

On page 11, the paragraph starting at line 1 is amended as follows:

An information processing apparatus ~~as claimed in claim 13~~ of a still further embodiment of the present invention comprises an access means (for example, step S21 shown in FIG. 4) for accessing an information processing device of an information provider through a server and a control means (for example, step S27 shown in FIG. 4) for controlling the provision by the server

of personal information stored in a storage means to the information processing device of the information provider on behalf of a user when a request for the personal information comes from the information processing device of the information provider.

On page 11, the paragraph starting at line 22 is amended as follows:

The terminal device 101 has a communication protocol stack composed of protocols that are in conformity with PIAFS (PHS Internet Access Forum Standard) for the data transmission standards having an error correction capability, PPP (Point to Point Protocol), which is synchronous digital communication capability having authentication between adjacent two points, and SMTP (Simple Mail Transfer Protocol) for stored transmission and are independent of TCP (Transfer Control Protocol) for the transport layer and application protocols that are in conformity with HTTP (HyperText Transfer Protocol) for supporting realtime interaction and are independent of TCP for the transport layer. In addition, the terminal device 101 has, by way of example, a bit-map display device, a touch panel, and a speaker device, all not shown, as user interfaces sufficient for securely ~~telling~~ providing a server 100 of user's intentions and securely receiving information from the server 100.

On page 13, the paragraph starting at line 18 is amended as follows:

The terminal device 101 and the server 100 establish communication therebetween in the following procedure. First, the terminal device 101 is connected to a station 103 by the PHS that functions as an incorporated wireless interface. The station 103 may be a public cell station (CS) or a home station (HS). When the terminal device 101 performs operations for call origination to

start communication, a request for call origination is sent to the station 103 through a normal PHS procedure. A request for termination is sent through the telephone line 104 to the cable (PIAFS) interface 105 of the server 100, which is a desired destination of the communication, upon which a call is established. Then, based on PIAFS, a data transfer session having an error correction capability is established. After PPP authentication, a data transfer session is established between the terminal device 101 and the proxy device 109 of the server 100. It should be noted that a call from the server 100 to the terminal device 101 may also be established. In this case ~~too,~~ also, call establishment is performed by the standard operation specified in each communication protocol.

On page 15, the paragraph starting at line 12 is amended as follows:

The proxy device 109 of the server 100 performs communication with the terminal device 101 by such simplified protocols as SMTP and ~~HTTP~~ HTTP, and, at the same time, performs communication with the service provider device 114 having a customer database 115 and the service provider device 116 having a customer database 117 by use of the TCP/IP protocol via the Internet 113. The proxy device 109, in cooperation with the user agent device 111, generates the user interface for personal information control from time to time and provides the generated user interface to the terminal device 101, thereby confirming user's intention and outputting the information to the user. Because the proxy device 109 has a personal information control (for example, P3P or OPS) required on the Internet 113 side, the terminal device 101 can be connected, independently of these protocols, to the server 100 only by use of the simplified protocols for providing the user interface.

On page 16, the paragraph starting at line 21 is amended as follows:

The user agent device 111 is provided with a communication port by the proxy device 109 at the start of an OPS session, starting communication with the service provider device 114. At this time, in order to mitigate the processing load at providing a user interface to be described later, both the user agent device 111 and the proxy device 109 each may have an identifier for recognizing each other. In execution of the OPS session, the user agent device 111 writes data to and/or reads data from the user profile database 110. In execution of the OPS session, the user agent device 111 also requests the proxy device 109 for generating a user interface on behalf of the user agent device 111 if it is necessary for the user agent device 111 to inform the user or seek a decision by the user.

On page 18, the paragraph starting at line 5 is amended as follows:

In the case of the latter, namely if the server 100 requires a user interface on its own in order to ask the user for an instruction or inform the user rather than using a user interface generated by the information service provider 114, the user agent device 111 sends its own identifier and the information necessary for configuring the user interface to the proxy device 109. Receiving the identifier and the information, the proxy device 109 calls its user interface generating capability, generates the user interface, and sends the generated user interface to the terminal device 101. If a user replay comes, the data is interpreted by the proxy device 109 and translated into a compatible internal information format, the ~~resultant~~ resulting data being sent to the user agent device 111.

On page 20, the paragraph starting at line 17 is amended as follows:

The following describes operations for receiving a WWW (World Wide Web) service by use of the HTTP ~~protocol for example~~ protocol, for example, from the service provider device 114 without the use of the personal information control (OPS), with reference to the timing chart shown in FIG. 3.

On page 20, the paragraph starting at line 22 is amended as follows:

First, in step S11, the terminal device 101 having no TCP/IP communication stack issues a request to get to the proxy device 109. In step S12, the proxy device 109 sends a request to get ~~having~~ the same contents to the service provider device 114 through the cable interface (IP router) 112 and the Internet 113 as a packet on the TCP/IP protocol. In step S13, according to the request, the service provider device 114 sends data to the proxy device 109 as a TCP/IP packet. In step S14, the proxy device 109 reports the result of this session to the terminal device 101, upon which the first request to get completes.

On page 22, the paragraph starting at line 15 is amended as follows:

As shown in FIG. 5, in this user interface, a button (YES) to be operated when the user agrees that the server 100 provides the personal information of the user to the service provider device 114 on behalf of the terminal device ~~101~~ 101, and a button (NO) to be operated when the user does not ~~agree~~ agree, are displayed. The user operates the YES button to agree that the

server 100 ~~provides~~ provide his or her personal information to the service provider device 114 or the NO button ~~not~~ to not agree.

On page 24, the paragraph starting at line 2 is amended as follows:

It should be noted that the user interface shown in FIG. 5 can be used as transmitted from the service provider device 114 without change. It is also ~~practicable~~ practical to reconfigure the user interface information in the user agent device 111 or the proxy device 109 as required. The reconfiguration will be described later with reference to the flowchart of FIG. 9.

On page 24, the paragraph starting at line 9 is amended as follows:

As described, in normal OPS session, the user need not be informed of the provision of the personal information. The following describes an example in which a user interface is generated separately from the OPS session at the discretion of the user agent device 111 and the user is informed of the user interface thus generated, with reference to the timing chart shown in FIG. 6. In the example of FIG. 6, every confirming operation to be performed by the user interface is omitted, the number of access operations performed is counted by an incorporated counter (not shown), and, when the count value has reached a predetermined value, ~~an~~ a confirming operation for the user is performed.

On page 24, the paragraph starting at line 22 is amended as follows:

First, in step S41, the terminal device 101 outputs a request to post to the proxy device 109. In step S42, the proxy device 109 transfers the received request to post to the service provider device 114. In step S43, in response to this request, the service provider device 114

informs the ~~user agent device 111~~ proxy device 109 of the start of the session and sends a request to read the personal information of OPS to the ~~user agent device 111~~ proxy device 109. In step S44, in response to the received request to read, the proxy device 109 informs the user agent device 111 of the start of the session and sends the request ot read to the user agent device 111. Because it is unnecessary to get permission from the terminal device 101 for the provision of the personal information to the service provider device 114 every time, the user agent device 111 reads only the items of the personal information stored in the user profile database 110 that have been requested by the service provider device 114 and outputs these items to the proxy device 109 in step S45. In step S46, the proxy device 109 outputs the received items of personal information to the service provider device 114.

On page 26, the paragraph starting at line 17 is amended as follows:

The proxy device 109 converts the user interface received from the user agent device 111 into an HTML format and transfers the ~~resultant~~ resulting user interface to the terminal device 101 by HTTP in step S48.

On page 27, the paragraph starting at line 24 is amended as follows:

On the other hand, if the data received from the service provider device 114 is found having an ~~OPS-associat-ed~~ OPS-associated header in step S71, then the proxy device 109 transfers this data to the user agent device 111 in step S72. Thus, in step S24 of FIG. 4 or step S44 of FIG. 6 for example, the session start and the request to read are sent from the proxy device 109 to the user agent device 111.

On page 30, the paragraph starting at line 13 is amended as follows:

If, in step S84, there is no more item to be checked (namely, all items to be confirmed have been entered in the template), then, in step S86, the proxy device 109 executes ~~ending~~ end processing such as adding a button and outputs the ~~resultant~~ resulting HTML template to the terminal device 101 in step S87.

On page 30, the paragraph starting at line 19 is amended as follows:

Next, in step S88, the proxy device 109 waits until the user (or the terminal device 101) makes a reply. If a reply comes, then, in step S89, the proxy device 109 determines the reply. If the reply is found to be a YES, then, in step S90, the proxy device 109 sets "YES" to the reply and outputs the resultant reply to the user agent device 111 in step S92. If the reply is found to be a NO, then, in step S91, the proxy device 109 sets "NO" to the reply and outputs the resultant reply to the user agent device 111 in step S92.

On page 31, the paragraph starting at line 4 is amended as follows:

The following describes, with reference to the flowcharts shown in ~~FIG. 10,~~ FIGS. 10A and 10B, detailed processing to be executed when the user agent device 111 receives from the proxy device 109 a request to read personal information from the user profile database 110 in step S24 of FIG. 4 or step S44 of FIG. 6 for example.

On page 32, the paragraph starting at line 14 is amended as follows:

On the other hand, if the item is found disabled for automatic reply in step S108, then the user agent device 111 records this item into the buffer 2 that stores the check list in step S109. Then, back in step S103, the user agent device 111 repeats the processing of step S103 and the subsequent steps. For example, user age, user annual income, and user occupation are entered in the check list to be checked by the user as shown in FIG. 5.

On page 32, the paragraph starting at line 22 is amended as follows:

If the item is found disabled for provision in step S106, then the user agent device 111 clears the buffer 1 and the buffer 2 in step S114 and sends a reply "Failed" to the service provider device 114 in step S115, terminal the processing. Namely, if any one of the items that is disabled for provision is included in the personal information requested by the service provider device 114, the protection of the personal information is ~~preferred~~ selected and the processing is terminated at the point ~~of time~~ {the provision of service from the service provider device 114 is canceled).

On page 34, the paragraph starting at line 3 is amended as follows:

Then, in step S112, the user agent device 111 waits until the proxy device 109 makes a reply. When the reply comes, then, in step S113, the user agent device 111 determines the received reply. If the reply is found ~~disabling~~ to be disabling, the transfer of that item to the service provider device 114, then, as with the case in which a prohibited item is found, the user

agent device 111 clears the buffer 1 and the buffer 2 in step S114. In step S115, ~~the~~ a reply "Failed" is outputted to the service provider device 114.

On page 34, the paragraph starting at line 12 is amended as follows:

On the other hand, if, in step S113, the reply from the user is found ~~permitting~~ to be permitting, the provision of the items in the check list to the service provider device 114 (namely, if the YES button shown in FIG. 5 was pressed), then the user agent device 111 goes to step S116 to transfer to the proxy device 109 the value indicative of successful reply (the pressing of the YES button shown in FIG. 5) for the service provider device 114 and the contents of the item recorded in the buffer 1. As described above, the proxy device 109 transfers this item to the service provider device 114.

On page 35, the paragraph starting at line 5 is amended as follows:

Further, in the case that another user attempts to use the personal information of a predetermined user in an unauthorized ~~manner. Therefore,~~ manner, a capability of preventing unauthorized access to the personal information can be added to the user agent device 111 (or the proxy device 109). FIG. 11 shows an example of the processing by the user agent device 111 for preventing the unauthorized access. In this example, the prevention processing starts when a predetermined user accesses the server 100 and the user agent device 111 is generated.

On page 36, the paragraph starting at line 17 is amended as follows:

In step S132, if another unauthorized access is found to have been performed, the user agent device 111 goes to step S137 to record the fact of this unauthorized access to the log file. Then, in step S136, the user agent device 111 informs the user or the carrier of the fact. This arrangement can instantly identify unauthorized access attempts.

On page 37, the paragraph starting at line 18 is amended as follows:

The above-mentioned capabilities ~~assumes~~ assume the use on the terminal device 101 as a mobile device or setup devices, which are limited in the resources and expandability of personal computers. However, these capabilities may also be used by the ordinary personal computer 106. In this case, although the communication stack below the transport layer is different between the personal computer 106 and the server 100, a same communication stack is available on the application level. The highest advantage of such a use form is that the same user profile database 110 can be shared between the terminal device 101 and the personal computer 106. Therefore, the profile data updated by any of these devices is made available with reliability for the later access by any of these devices.

On page 38, the paragraph starting at line 9 is amended as follows:

Thus, the use of the server 100 for performing proxy services allows any simple terminal devices with only user interface installed to transfer data associated with personal privacy information in an open environment such as the Internet. In addition, because the server 100 is

compatible with the functional expansion of the network side, the user can use new capabilities while using the simple terminal device.

On page 38, the paragraph starting at line 23 is amended as follows:

As described and according to the information processing apparatus ~~as claimed in claim 1, the information processing method as claimed in claim 11, and the transmission medium as claimed in claim 12,~~ of the present invention, when access is made by the user and a request is made from an information provider, stored personal information is provided to the information provider on behalf of the user. Consequently, authorized personal information can be ~~surely~~ securely transmitted without error to the information provider, thereby allowing the information provider to ~~surely~~ securely perform billing processing for the information to be provided. In addition, the user can ~~surely~~ securely provide his or her personal information from any mobile location in the same environment. Further, if the communication form between the user and the information provider has changed due to functional expansion or ~~troubleshooting~~ troubleshooting, for example, the information processing apparatus of the user need not be changed accordingly, thereby saving the user's maintenance load.

On page 39, the paragraph starting at line 18 is amended as follows:

~~According~~ Moreover, according to the information processing apparatus of the present invention ~~as claimed in claim 13, the information processing method as claimed in claim 15, and the transmission medium as claimed in claim 16,~~ the server controls the provision of stored personal information to an information provider when a request for the stored personal

information comes from the information provider. Consequently, the user can provide his or her personal information to the information provider as required through a low-cost apparatus, from any location, and with reliability.

On page 48; the Abstract starting at line 2 is amended as follows:

Personal information of a user is provided to an information provider from any location, through a simple apparatus, and with reliability. Personal information is pre-stored in a user profile database of a server. When the user accesses a service provider device from a terminal device through the server and the Internet, the service provider device requests the ~~terminal device to enter the~~ personal information of that user. The server reads the requested personal information from the user profile database and transfers the personal information ~~from a proxy device~~ to the service provider device. This novel arrangement makes it unnecessary for the ~~terminal device~~ user to input the personal information ~~on its own. This holds true the a personal computer~~.